

There is a series of observations of this satellite by Bessel in the volumes of the *Königsberg Observations*, 1832 to 1837. *Iapetus* was compared with *Titan* by means of the Heliometer; and it would be interesting to have a determination of the orbit of *Iapetus*, and of the mass of the planet, from these measures after the method proposed by O. Struve.

Naval Observatory, Washington:
1883, Sept. 25.

The Disappearance of the Satellites of Jupiter.
By Wentworth Erck.

The simultaneous disappearance, predicted by the *Nautical Almanac* for the morning of the 15th, did not take place, owing to an error of twenty-four minutes in the *Nautical Almanac* time of egress of the fourth satellite, which passed off the disk just as the third satellite entered on the disk.

The following is an abstract of the notes made on the occasion with a $7\frac{1}{2}$ -in. Equatorial, and powers of 100 and 250.

G.M.T. 1883, Oct. 14.

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| 12 42 ± | I. disappeared, being eclipsed. |
| 13 5 0 | Shadows of II. and III. conspicuous; but cannot see Sat. IV., which is on the disk. |
| 51 15 | II. about to enter on the disk. |
| 14 14 12 | III. shadow off the disk. |
| 21 10 | II. on the very point of entering; its disk is well defined, as is that of III., but the disk of II. is apparently not more than one-third of the diameter of that of III. |
| 28 10 | II. has now completely entered. Though II. and IV. are on the disk, and the definition good, yet I cannot see the satellites themselves with powers of 100 and 250. |
| 15 36 0 | II. shadow off disk. |
| 50 55 | III. first contact with limb. |
| 50 55 | IV. off the disk, at the same moment that III. makes contact at the opposite side of the disk; III. enters on the great Southern Belt, whereas IV. emerges at a point very far S. of the Belt at latitude, perhaps, 30° . |
| 56 0 | III. half on; IV. well of. |
| 59 25 | III. completely on, took about 8^m to enter. |
| 16 13 50 | I. re-appearing from occultation. |
| 15 50 | I. completely off. III. not seen on disk. |
| 20 0 | Observations discontinued. |

Comparison of Observed Times with Greenwich Times.

				Observed.	Greenwich.	Diff.
1	III. Shadow E.	...	...	14 14 12	14 15 0	—
2	II. Tr. Ingress	...	...	28 10	33 0	5
3	II. Shadow E.	...	...	15 36 0	14 50 0	46
4	IV. Transit E.	...	...	51 0	16 15 0	24
5	III. Transit I.	...	...	59 25	15 56 0	3
6	I. R. Oc.	...	...	16 15 50	16 15 0	—

In the case of No. 3—*i.e.* the egress of the shadow of II.—I cannot at all account for the difference of 46 minutes.

Shankhill, Co. Dublin :
1883, Oct. 24.

Jupiter without visible Satellites. By the Rev. S. J. Johnson.

The disappearance of *Jupiter's* satellites on the morning of October 15 afforded an interesting instance of the tabular errors of the fourth satellite. Instead of lasting nineteen minutes, as according to the *Nautical Almanac*, it only lasted half a minute, and possibly, with a large instrument, the satellites may never have entirely gone out of sight.

On turning the telescope on *Jupiter* at 3^h 45^m A.M. I never noticed the belts sharper defined. One satellite, the third, alone remained visible just at the edge of the planet. At 3^h 55^m 50^s it appeared to have vanished. Thirty seconds afterwards the fourth began to come into view at the opposite side of the planet ; so that as viewed with a telescope of the size I was employing (3¼-in. Equatorial, power 180), the planet for half a minute appeared denuded of his satellites ; at 4^h 13^m 40^s A.M. the first reappeared.

Melplash Vicarage,
Bridport : Oct. 27.